UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,001	01/29/2004	Hui Zhang	1856	5019

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EXAMINER
LEE, CHRISTOPHER E

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Advisory Action ***Before the Filing of an Appeal Brief***	10/767,001	ZHANG ET AL.
	Examiner	Art Unit	
	Christopher E. Lee	2112	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED <u>11 May 2006</u> FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

    a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

    b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

    Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

<u>NOTICE OF APPEAL</u>

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

<u>AMENDMENTS</u>

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will <u>not</u> be entered because

    (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);

    (b) ☐ They raise the issue of new matter (see NOTE below);

    (c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

    (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

    NOTE: *See Continuation Sheet.* (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

    The status of the claim(s) is (or will be) as follows:

    Claim(s) allowed: _____.

    Claim(s) objected to: _____.

    Claim(s) rejected: *1-24*.

    Claim(s) withdrawn from consideration: _____.

<u>AFFIDAVIT OR OTHER EVIDENCE</u>

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will <u>not</u> be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will <u>not</u> be entered because the affidavit or other evidence failed to overcome <u>all</u> rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

<u>REQUEST FOR RECONSIDERATION/OTHER</u>

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: <u>See Continuation Sheet.</u>

12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.

13. ☐ Other: _____.

Christopher E. Lee
Patent Examiner
Art Unit: 2112

Continuation of 3. NOTE: The proposed amendment raises a new issue "bypassing the buffer and transfening the information to the bus if the buffer is empty and the bus grant indication indicates that transfer of the information to the bus is allowed" in the claim 1, which has not been considered, and which might extend the scope of the claimed invention. Therefore, it requires further consideration and/or search, and will not be entered.

Continuation of 11. does NOT place the application in condition for allowance because:

In response to the Applicants' argument with respect to "...For the reasons cited above regarding amended claim 1, Applicants do not believe that the AAPA teaches the step of bypassing the buffer and transferring the information to the bus if the bus grant indication indicates that transfer of the information to the bus is allowed. What AAPA does teach is the method step of transferring the information from the buffer to the bus if the bus grant indication indicates that transfer of the information to the bus is allowed. As such, the buffer is not bypassed in the AAPA, but is rather used in the transfer process." in the Response page 6, line 14 through page 7, line 21, the Examiner believes the Applicants misinterpret the claim rejection.
The Applicants essentially argue that AAPA doesn't teach the above argued elements. However, Park et al. [US 5,526,508 A; hereinafter Park] teaches the step of bypassing the buffer and transferring the information to the bus if the buffer is empty and transfer of the information to the bus is allowed at col. 3, lines 27-35, and at col. 4, lines 31-46.
Therefore, the combination of AAPA and Park suggests the claimed limitation "the step of bypassing the buffer and transferring the information to the bus if the bus grant indication indicates that transfer of the information to the bus is allowed," and thus, the Applicants' argument on this point is not persuasive.

In response to the Applicants' argument with respect to "...The Office contends that the statement, 'transfer of the information to the bus is allowed', is equivalent to the claim language which states, 'the bus grant indication indicates that transfer of the information to the bus is allowed'. ... Simply because the bus is idle does not mean that transfer of said information to the bus is allowed, there may be other bus requests waiting to be serviced. The bus grant indication in accordance with the present invention indicates that the specific information which is requesting transfer to the bus has been allowed access to the bus. It is not simply that the bus is idle, but that an indication has been made by a bus grant indication that specific information is allowed to the transferred to the bus. This 'allowance of transfer' is not equivalent to the bus being idle and 'available for transfer'." in the Response page 7, line 22 through page 8, line 14, the Examiner believes the Applicants misinterpret the claim rejection.
First of all, the Applicants essentially argue that Park reference doesn't teach the above argued elements, i.e., the bus grant indication indicates that transfer of the information to the bus is allowed. However, AAPA teaches the step of transferring the information if the bus grant indication indicates that transfer of the information to the bus is allowed (See AAPA, page 9, paragraph [0029]).
Secondly, the Applicants merely assert that the bus is idle does not mean that transfer of said information to the bus is allowed, there may be other bus requests waiting to be serviced. In contrary to the Applicants' assertion, Park discloses that bypassing the RD buffer (i.e., buffer) and transferring the memory data (i.e., information) to the CPU/Cache bus (i.e., bus) if the RD buffer (i.e., buffer) is empty after transferring CPU/Cache data 5 from said RD buffer during the cycle 402 in Fig. 4B and the reading address signal 42 on said CPU/Cache bus (i.e., signal for bus grant indication) indicates that transfer of the information to the CPU/Cache bus allowed at col. 5, lines 16-35.
Furthermore, the Applicants merely assume that there may be other bus requests waiting to be serviced after write-back operation is completed. However, Park clearly shows that CPU/Cache bus is immediately allowed to RD buffer and bypassing RD buffer cycle in the timing chart Figs. 4A-E. Moreover, the Applicants fail to show the fact of the above assertion, i.e., other bus requests waiting to be serviced, from Park reference.
Thus, the Applicants' argument on this point is not persuasive.

In response to the Applicants' argument with respect to "Additionally, the Office states at Pg. 19, beginning at line 7, that Park discloses that the read data is transmitted with regard to the status of the CPU/Cache bus. Applicants disagree with this statement by the Office. ... The Park reference does not discuss the use of any type of bus grant request system to track the status of the CPU/Cache bus. In the Park reference, the CPU/Cache bus is always available for access by the cache buffer or the memory bus. Park does not discuss the need for a bus grant to access the bus because apparently the bus is always available when it is not being used. It can be inferred that the CPU/Cache bus is a dedicated bus and therefore bus grant requests and the issuance of grants are not necessary with the Park system." in the Response page 8, lines 15-27, the Examiner believes the Applicants misinterprets the claim rejection.
Actually, the primary reference AAPA teaches the claimed subject matter "bus grant indication," and the use of bus grant request system to track the status of the bus. And, the secondary reference Park teaches the claimed subject matter "bypassing the buffer," therefore, the combination AAPA and Park suggests the obviousness of the claimed invention.
Furthermore, in contrary to the Applicants' statement, the CPU/Cache bus is not always available for access by the cache buffer or the memory bus in Park. In Fig. 4A of Park, the CPU/Cache bus is only available to the RD buffer and the memory bus after the CPU/Cache reading address signal 42 (See Park, col. 6, lines 11-16).
And, even though the Applicants assert that Park does not teach that the bus grant requests and the issuance of grants are not necessary since the CPU/Cache bus is a dedicated bus, the argued elements are clearly taught by the primary reference AAPA.
Thus, the Applicants' argument on this point is not persuasive.

In response to the Applicants' arguments with respect to "At the bottom of Page 17 and the top of Page 18 of the Final Office Action, the Office summarizes ... Applicants believe that the Office's obviousness rejection is defective due to the inclusion of separate references to represent each of the different features described in the claims of the application. ... In particular, the Office cites the Park reference to support bypassing the buffer and transferring information to the bus and the AAPA reference to support the use of a bus grant indication to indicate that the transfer of information to the bus is allowed. However, the claim element states, 'transferring the information to the bus if the bus grant indication indicates that transfer of the information to the bus is allowed'. Clearly, the transfer of the information to the bus depends upon the bus grant indication as is evidenced by the use of the term if in the claim element. As such, it is improper to divide the

claim element as presented by the Office and in so doing, the Office has lost site of the claim as a whole." in the Response page 8, line 28 through page 10, line 7, the Examiner respectfully disagrees.

In fact, the primary reference AAPA clearly teaches the limitation "transferring the information (i.e., information CAD, CDW, and CCO in said Two-Entry Buffer) to the bus if the bus grant indication (i.e., GNT/PARKING-GNT) indicates that transfer of the information to the bus is allowed" on page 9, paragraph [0029]. However, AAPA does not teach transferring the information to the bus if the buffer is empty and the transfer of the information to the bus is allowed. Therefore, the Examiner brought Park as a secondary reference in order to show the obviousness of the claimed invention through an establishment of a prima facie case of obviousness.

In particular, the claim 1 rejection under 35 USC §103(a) has never divided the claimed limitation into two pieces of segmented limitations, such as the Applicants assert, i.e., "transferring the information to the bus if the bus grant indication indicates that transfer of the information to the bus is allowed," and "transferring the information to the bus if the buffer is empty." Instead, the Office Action clearly states that AAPA discloses "transferring the information to the bus if the bus grant indication indicates that transfer of the information to the bus is allowed," but AAPA does not teach "transferring the information to the bus if the buffer is empty and the transfer of the information to the bus is allowed." However, Park teaches "transferring the information to the bus if the buffer is empty and the transfer of the information to the bus is allowed." Therefore, the combination of AAPA and Park suggests the obviousness of the claimed invention, and the Applicants' mere allegation of improper division of the claim language is not persuasive.

Furthermore, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicants' disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). And, in response to Applicants' arguments against the AAPA and Park references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Thus, the Applicants' arguments on these points are not persuasive.

In response to the Applicants' argument with respect to "Another issue before the Office is whether it would have been obvious to combine the references without having access to the application that is under examination to arrive at the claimed invention. ... Applicants respectfully disagree with the determination by the Office regarding the combination of references. Park teaches transferring information to the bus when the buffer is empty and the bus is "available", not that the transfer of the information to the bus is "allowed" which are two different things as explained above. The AAPA teaches the use of a bus grant indication to indicate that transfer of the information to the bus is "allowed". The Park reference does not provide any motivation to substitute the use of a bus grant indication to indicate that transfer of the information to the bus is allowed. The Park reference does not address the need for any type of grant request indicators for the CPU/Cache bus. As such, the Applicants contend that the Office has improperly used the instant application as a basis for the motivation to combine or modify the prior art to arrive at the claimed invention." in the Response page 10, lines 8-25, the Examiner respectfully disagrees.

In contrary to the Applicants' statement, the claim 1 rejection under 35 USC §103(a) does not require any substitution of the use of a bus grant indication to indicate that transfer of the information to the bus is allowed, which has been taught by AAPA, but requires an additional step of transferring of Park to AAPA's method, for the advantage of providing a way that a device can read the information at high speed without loss of the data bandwidth, which is clearly discloses by Park, at col. 6, lines 30-31.

Furthermore, even though the Applicants assert that Park teaches transferring information to the bus when the buffer is empty and the bus is "available," not "allowed." However, the primary reference AAPA clearly teaches the limitation "the bus grant indication indicates that transfer of the information to the bus is allowed," which is inherently anticipating "the bus is available to be used" as well, and further the secondary reference Park also clearly teaches the limitation "transferring the information to the bus if the buffer is empty and transfer of the information to the bus is allowed," which could be broadly interpreted as "the bus is available to be used." Therefore, the combination of AAPA and Park with rationale for the proper combination suggests the obviousness of the claimed invention.

Thus, the Applicants' argument on this point is not persuasive.

In response to the Applicants' argument with respect to "To establish a prima facie case of obviousness, the prior art must cited must teach or suggest all the claim limitations. Neither the Park et al. reference nor the Applicants' Admitted Prior Art teach or suggest the step of transferring the information to the bus if the buffer is empty and the bus grant indication indicates that transfer of the information to the bus is allowed. Therefore, a prima facie case of obviousness has not been established because the cited references fail to disclose all the elements of the Applicants' invention." in the Response page 10, line 26 through page 11, line 2, the Examiner respectfully disagrees.

In contrary to the Applicants' statement, all the rejections under 35 USC §103(a) in the prior Office Action established a prima facie case of obviousness meeting the three basic criteria of the MPEP 2143.03 (8th ed. 2001). See the Office Action mailed on 15th of March 2006. Furthermore, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Examiner has clearly pointed out rationale for appropriate combination of the references.

Thus, the Applicants' argument on this point is not persuasive.

In response to the Applicants' arguments with respect to "Regarding independent claim 9, the Office states AAPA teaches logic configured to ... However, the claim element of amended claim 9 states that the information be transferred from the device to the bus, thereby bypassing the buffer, if the buffer is empty and the bus grant indication indicates that transfer of the information to the bus is allowed. As such, AAPA teaches transferring information from the buffer to the bus dependent upon the status of the bus grant, but AAPA does not teach transferring information from the device to the bus without passing through the buffer. ... " in the Response page 11, line 3 through page 12, line 16, the Examiner respectfully disagrees.

The Examiner notices that, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Moreover, the recitation in the claim "thereby bypassing the buffer" has not been given patentable weight because it

has been held that the functional "thereby" statement does not define any structure and accordingly cannot serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).
And, the remaining arguments have been properly discussed in the above arguments responses, and thus the Applicants' arguments on this point are not persuasive according to the above discussion.

In response to the Applicants' arguments with respect to "Regarding independent claim 19, the Office states that AAPA does not teach a buffer bypass circuit for reducing latency in information transfers to the bus comprising: ... The Applicants respectfully disagree with the Office's conclusion regarding the motivation to combine the references as suggested by the Office. As previously detailed with regard to independent claim I , Applicants contend that the Park reference does not provide any motivation to substitute the use of a bus grant indication to indicate that the bus is available for transfer of the information to the bus. The Park reference does not address the need for any type of grant request indicators for the CPU/Cache bus. As such, the Applicants contend that the Office has improperly used the instant application as a basis for the motivation to combine or modify the prior art to arrive at the claimed invention. ..." in the Response page 12, line 17 through page 14, line 21, the Examiner believes all the arguments have been properly discussed in the above argument responses, and thus the Applicants' arguments on this point are not persuasive according to the above discussion.